

REMARKS

The Applicants and the undersigned thank Examiner Rizk for a careful review of this application and greatly appreciate the claim allowances and the indications of allowable subject matter. Claims 1-20 are pending in the application, with Claims 1, 8, 11, and 14 being the independent claims.

In the Office Action mailed April 13, 2010, the Examiner allowed Claims 1-13 and acknowledged that Claims 15-20 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Examiner issued a rejection of Claim 14 under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent No. 6,678,339 to Lashkarian (hereinafter "*Lashkarian*"). The Applicants offer the following remarks in traverse of the pending rejection and objections.

Claims 1-13 Remain Allowed

The Applicants thank the Examiner for allowing Claims 1-13.

Claims 14 is Distinguishable Over *Lashkarian*

The Examiner has rejected Claim 14 as anticipated by *Lashkarian*. As discussed below, the Applicants respectfully submit that *Lashkarian* does not anticipate Claim 14 because *Lashkarian* does not disclose the invention of Claim 14.

Claim 14 defines a method for decoding a received signal. This method includes a step that recites "decoding the received signal using generalized maximum likelihood estimation with the estimated optimal timing offset" that is estimated "on a symbol-by-symbol basis." The Applicants respectfully submit that *Lashkarian* fails to disclose, teach, or suggest decoding a received signal using generalized maximum likelihood estimation with an estimated optimal timing offset that is estimated on a symbol-by-symbol basis in accordance with the recitations of Claim 14. In contrast, *Lashkarian* discloses a method for synchronizing multi-carrier signals "which provides maximum likelihood estimation of timing offset and frequency offset" that "compensate the estimation error over an entire span of observed data areas." See *Lashkarian*, Abstract. This method of *Lashkarian* "provides a joint probability density function for the

estimates which consists of two terms; one generated from observed data received during a first interval and one generated from observed data received during a second, following, interval.” See *Lashkarian*, Abstract. The probability density function is generated based on an observation vector having an observed carrier frequency timing offset and a plurality of data-symbol frames, having an observed symbol timing error. See *Lashkarian*, Col. 2:57 - 3:2. A joint maximum likelihood estimate of a joint carrier frequency offset and a symbol timing error is then generated from the probability density function. See *Lashkarian*, Col. 2:64 - 3:2. Thus, while the method of *Lashkarian* may use an observation vector having observed carrier frequency timing offset and observed symbol timing error to generate a maximum likelihood estimate, the disclosed method does not include than an optimal timing offset estimated on a symbol-by-symbol basis. Furthermore, the *Lashkarian* process is performed globally over the entire span of the estimation vector, rather than on a symbol-by-symbol basis.

In view of the foregoing discussion of distinctions between Claim 14 and *Lashkarian*, the Applicants submit that Claim 14 is allowable over *Lashkarian* and request such allowance.

Claims 15-20 are Distinguishable Over *Lashkarian*

The Examiner indicated that Claims 15-20 defined a patentable invention but objected to those claims as depending from rejected Claim 14. As discussed above, Claim 14 is allowable and thus, Claims 15-20 are likewise allowable.

CONCLUSION

The Applicants submit the foregoing as a full and complete response to the Official Action dated April 13, 2010. To the extent that the Examiner believes the Applicants have not addressed each specific point the Examiner has raised or each specific rejection of every independent and dependent claim, the Applicants submit that this paper shows that the independent claims, and thus the claims depending therefrom, are allowable over the cited references. The Applicants have not acquiesced to any rejection or point raised by the Examiner and reserve the right to address the patentability of any additional claim features in the future.

The Applicants submit that this application is in condition for allowance and courteously request for the Examiner to issue a Notice of Allowance. If any issues exist that can be resolved with an Examiner's Amendment or a telephone conference, please contact the undersigned at 404/572-2486 in Atlanta, Georgia.

The accompanying papers are believed to address any and all fees that may be due in this case, including any fees required for consideration of this paper. However, should the Commissioner deem that any additional fees (including any fees for extensions of time) or credits are due, the Commissioner is authorized to debit such fees from, or to credit any overpayments to, USPTO Deposit Account No. 11-0980, Ref. No. 07982.105019.

Respectfully submitted,

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